



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,962	07/30/2003	Raymond J. Wong	3191-003-01	8895
33432	7590	04/06/2004	EXAMINER	
KILYK & BOWERSOX, P.L.L.C. 53 A EAST LEE STREET WARRENTON, VA 20186			LANGE, WAYNE A	
		ART UNIT	PAPER NUMBER	
		1754		

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

AS

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
10629962			

EXAMINER

ART UNIT PAPER NUMBER

1754

DATE MAILED:

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined  Responsive to communication filed on \_\_\_\_\_  This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1.  Notice of References Cited by Examiner, PTO-892.
2.  Notice of Draftsman's Patent Drawing Review, PTO-948.
3.  Notice of Art Cited by Applicant, PTO-1449.
4.  Notice of Informal Patent Application, PTO-152.
5.  Information on How to Effect Drawing Changes, PTO-1474.
6.

Part II SUMMARY OF ACTION

1.  Claims 24-31 and 35-51 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2.  Claims \_\_\_\_\_ have been cancelled.

3.  Claims \_\_\_\_\_ are allowed.

4.  Claims 35-51 are rejected.

5.  Claims \_\_\_\_\_ are objected to.

6.  Claims 24-31 and 35-51 are subject to restriction or election requirement.

7.  This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8.  Formal drawings are required in response to this Office action.

9.  The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are  acceptable;  not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10.  The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been  approved by the examiner;  disapproved by the examiner (see explanation).

11.  The proposed drawing correction, filed \_\_\_\_\_, has been  approved;  disapproved (see explanation).

12.  Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has  been received  not been received  been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13.  Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14.  Other

EXAMINER'S ACTION

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 24-31, drawn to sodium zirconium carbonate and a method for its production, classified in class 423, subclass 420.2.
- II. Claims 35-51, drawn to zirconium phosphate and a method for its production, classified in class 423, subclass 308.

The inventions are distinct, each from the other because:

Neither invention would be obvious over the other, since the Group I claims are directed to zirconium basic carbonate and the Group II claims are directed to zirconium phosphate, which are mutually exclusive and unrelated compounds.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr Kilyk on March 26, 2004 a provisional election was made with traverse to prosecute the invention of Group II, claims 35-51. Affirmation of this election must be made by applicant in replying to this

Art Unit: 1754

Office action. Claims 24-31 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 35-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 362226807 in view of JP 359069428. JP '807 discloses a method for producing zirconium phosphate by heating a mixture of zirconium oxide and phosphoric acid. (See the English Abstract.) The difference between the process disclosed by JP '807, and that recited in claims 35-42, is that JP '807 does not disclose that the zirconium oxide should be formed by treating sodium zirconium phosphate with caustic soda. JP 359069428 discloses a method for producing zirconium oxide by heating an alkaline aqueous solution containing zirconium carbonate. (See the English Abstract.) It would be obvious that the alkaline agent in the process of JP '428 could be caustic soda. It would be prima facie obvious to form the zirconium oxide required for the process of JP '807 by the process disclosed in JP '428, since one of ordinary skill in the art would

appreciate that the zirconium oxide require for the process of JP '807 could be derived from any known or conventional source.

Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '807 in view of JP '428 as applied to claim 35 above, and further in view of Pospelova et al et al. It would be further obvious from Pospelova et al to form the sodium zirconium phosphate required in the process of JP '428 by heating zirconium oxychloride with soda ash, since Pospelova et al disclose such reaction on page 997.

Claims 46-51 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 362226807. The zirconium phosphate formed according to the process of of JP '807 would inherently have the properties recited in claims 46-51, since the zirconium phosphate is formed by heating a reaction mixture of zirconium oxide with phosphoric acid.

Claims 46-51 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over either Alberti et al '663 or Nowell et al. It would be expected that the zirconium phosphate of Nowell et al and Alberti et al '663 would have the properties recited in claims 46-51, since Nowell et al disclose at col. 1, lines 22—32 that the zirconium phosphate can selectively remove ammonium and heavy metal ions from solution by ion exchange, and Alberti et al '663 teaches at col. 3, lines 14-22 that the zirconium phosphate exchanges quickly such large-sized ions as cesium and barium.

Claimss 35-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

Art Unit: 1754

applicant regards as the invention. In claim 35, last line, there is no clear antecedent basis for "said acid zirconium phosphate". In claim 46, it is indefinite as to whether the Na content is weight or molar. In claim 47, last line "ANSI/AAMI RD-5-1992" is indefinite since such standard is subject to change.

Claims 46-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not enable one to form zirconium phosphate having a sodium content of from about 4 to about 6%.

Alberti et al '656, Tawil et al and Stynes et al are made of record for disclosing various methods for producing zirconium phosphate.

Any inquiry concerning this communication should be directed to Wayne Langel at telephone number 571-272-1353.



Wayne A. Langel  
Primary Examiner  
Art Unit 1754